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Questions and Answers About Changes in the Massachusetts Enhanced Emissions and Safety Test Program

June 1, 2004

The Enhanced Emissions and Safety Test Program, which began in October 1999, is run by the Massachusetts Department of Environmental Protection (DEP) and the Registry of Motor Vehicles (RMV) through a contract with Agbar Technologies, Inc. This Program tests most vehicles made since 1984 on a dynamometer, a treadmill that simulates actual driving conditions in order to estimate emissions as accurately as possible. The emissions estimate is then compared to regulatory standards for nitrogen oxide, hydrocarbons, and carbon monoxide to determine whether the vehicle passes or fails. If the vehicle fails, its emission control system or related components must be repaired to reduce the excess emissions.

1. What's wrong with the Enhanced Emissions and Safety Test Program? Why does it need to be fixed?

When DEP evaluated the effectiveness of the emissions test (a study that was completed in July 2003) the agency found that the Program was achieving only 90% of the Commonwealth's commitment for reductions of nitrogen oxide ("NOx", which is one of the two principal components of smog that the Program targets). Also, routine auditing of test equipment at the inspection stations (summary report submitted to U.S Environmental Protection Agency in September, 2003) identified problems with equipment reliability: the test equipment was not measuring emissions as it was designed to, and maintenance of the equipment was inadequate.

2. How will the Program be changed to fix the problems?

Agbar Technologies will take specific steps to significantly improve the accuracy and reliability of the dynamometer testing equipment:

- *All test equipment will be upgraded and/or replaced at no cost to motorists, inspection stations, or the Commonwealth.* At all stations, Agbar will upgrade equipment for measuring nitrogen oxide, and will supply new scanners for vehicle identification numbers and stickers. In addition, Agbar will replace any equipment that is not able to meet a new "Tier 1" reliability standard (see below). Agbar expects to invest up to $15 million dollars for these program improvements.

- *Equipment will be maintained to meet specific reliability standards.* DEP has established specific standards for determining whether the equipment is working at a sufficiently high level of reliability:

  - ✓ The equipment components that are most critical for accurately assessing vehicle emissions (identified as "Tier 1" components) must achieve a 90% reliability rate, based on random audits performed by DEP;
  - ✓ Less critical equipment components (identified as "Tier 2" components) must achieve an 85% reliability rate, based on random audits performed by DEP; and
  - ✓ Tier 1 equipment components that are repaired after failing a previous audit must achieve a 95% reliability rate based on DEP's follow-up audits.

  To ensure that these reliability standards are met, Agbar will:

  - ✓ Visit each inspection station quarterly to audit equipment performance and provide routine maintenance;
  - ✓ Use comprehensive quality control measures (including Statistical Process Controls) to identify equipment whose performance has started to degrade so that maintenance can be provided to prevent equipment failures;
  - ✓ Automatically "lock out" workstations that fail periodic and rigorous self-checks so they cannot be used for inspections until they are repaired; and
  - ✓ Provide DEP and the Registry of Motor Vehicles with improved data and records that document its implementation of these requirements.

- *Service to inspection stations will be improved*. Agbar has committed to respond to service calls from inspection stations within one business day, and to complete any repairs within four business days. Stations will be entitled to rebates of a portion of their monthly Program fee if their inspection equipment is out of service for more than eight business days in a single month or on five or more consecutive business days due to Agbar's inability to correct equipment problems.

3. What other Program changes are being made now?

Starting on June 15, 2004, the Program will use the computers on-board 1996 and newer vehicles to evaluate the performance of their emission control systems instead of the dynamometer test. Most 1996 or newer vehicles have a standardized computer system and sensors called "On Board Diagnostics" or "OBD II" that monitor the performance of its engine and emissions control system. OBD II determines whether the vehicle's emissions components are functioning properly. In addition, repair technicians use OBD II to diagnose and repair problems. Since newer vehicles now account for about 60% of the Massachusetts vehicle fleet, only 40% of the vehicles that are required to have their emissions checked will need to be tested on the dynamometer. This change will benefit motorists with newer vehicles (because the test is significantly faster), as well as those with older vehicles (lines at inspection stations will move more quickly). It will also result in cleaner air because the OBD II test can identify emission system malfunctions before they produce high levels of pollution, which will in turn promote

earlier repairs and less air pollution. Because the OBD II test is faster than the dynamometer test, this change will allow inspection stations to test more vehicles.

Agbar will also upgrade the OBD II test to support newer computerized systems (e.g., Controller Area Network or "CAN" OBD systems) that are widely used in vehicles starting with model year 2004.

4. How will the Commonwealth ensure that all these changes happen?

DEP and RMV have amended the contract with Agbar to spell out the specific changes related to the dynamometer test equipment and other program requirements, and to establish implementation deadlines for them. The Contract Amendment establishes:

- ✓ Requirements and performance standards (described above);
- ✓ Specific payments to the Commonwealth ("liquidated damages") if performance goals are not met; and
- ✓ Rewards for good performance through the award of up to two one-year contract extensions (through 2007 or 2008) if the requirements and reliability standards are met.

5. When will these Program changes be made?

Agbar will start upgrading inspection equipment immediately, and must complete all upgrades and replacements within nine months. DEP will start auditing new and upgraded equipment as it is brought on-line. Agbar will pay damages to the Commonwealth if the equipment does not meet the reliability standards. More detailed information about the Contract Amendment can be found in the attached *Summary.*

6. When testing equipment does not or cannot meet the new reliability standard, who is responsible for replacement costs?

Agbar is responsible for upgrading or replacing equipment, without passing the associated costs on to motorists, the inspection stations, or the Commonwealth. Agbar expects to invest up to $15 million to meet these requirements.

7. What happens if my vehicle is due for an emissions test but the inspection station that I use has equipment that needs to be replaced?

Vehicles that need a dynamometer emissions test from a station with equipment that is due to be replaced will be given a year's extension of the emission testing requirement (but will get a safety test). These vehicles will get both emissions and safety tests when they go for their next inspection the following year. Once the new equipment is installed at the inspection station, it will resume conducting all emissions tests.

8. How will the Program change for the inspection stations?

- ✓ Full use of OBD II tests for 1996 and newer vehicles will allow stations to test more vehicles and to conduct faster inspections;
- ✓ All workstations will be upgraded or replaced in the next nine months. Upgrades include improved scanners, new NOx sensors (and "chillers" if necessary), and hardware and software to test CAN-equipped vehicles (made in model year 2004 and later);
- ✓ All probe tips will be replaced with new models that are less prone to breaking and leaking, and alternative designs will be investigated to identify additional improvements;
- ✓ Agbar will provide routine preventative maintenance via quarterly visits;
- ✓ Agbar will use comprehensive quality control measures for early identification of equipment that has started to perform outside of specifications so repairs can be initiated before the equipment fails. These measures include digital audits, reviews of control charts, and comparisons of actual performance to expected results to identify erroneous tests;
- ✓ Agbar has committed to establishing specific deadlines for correcting computer software "bugs";
- ✓ The number of work stations in the Program has been capped at the existing level (1,665);
- ✓ Inspection station fees will not be changed;
- ✓ Stations will get rebates on a portion of their Program fees if their equipment is down for excessive periods of time; and
- ✓ Workstations that are not operating within specific standards will be "locked out", and will not be able to perform inspections until the problems are fixed.

9. Why is the state requiring Agbar to fix faulty testing equipment but not to change the test itself?

Upgrading the dynamometer testing equipment and ensuring that it is adequately maintained is the best way to meet the Program's emissions reduction goals while maintaining the balance between inspector safety, test effectiveness, cost, and motorist convenience. Based on the Program improvements announced today, the U.S. Environmental Protection Agency has approved the Massachusetts Enhanced Emissions and Inspection Program.

As soon as full OBD II testing begins, dynamometer tailpipe testing will no longer be needed for more than 60 percent of the cars, light trucks and SUVs in Massachusetts. Within four years, less than ten percent of the state's fleet is expected to need tailpipe testing. This, combined with the fact that vehicles without OBD II receive emissions tests only every other year, makes it clear that Massachusetts is already beyond the point of diminishing returns for the substantial investment that replacing the test would require, while the dynamometer equipment would still need the improvements that the Contract Amendment is requiring.

11. Will the number of inspection stations be increased or decreased?

The contract amendment caps the number of workstations in the Program at any time at the current level (1,665). Anyone seeking to establish a new inspection station can work with an existing station to transfer ownership of a workstation, or can wait for equipment to become available from a station that is closing down.

12. Will these program changes mean that the Massachusetts Enhanced Emissions and Safety Test Program will meet its requirements under the U.S. Clean Air Act?

Yes. Reliable control of pollution from Massachusetts vehicles currently used on the roads is a critical part of the Commonwealth's "clean air" strategy. Massachusetts has committed to the U.S. Environmental Protection Agency in its "State Implementation Plan" that the Enhanced Emissions and Safety Test Program will address three pollutants: hydrocarbons, carbon monoxide, and nitrogen oxide. DEP's test evaluation completed in 2003 found that the Program was meeting its goals for hydrocarbons and carbon monoxide, but was only meeting 90% of its goal for nitrogen oxide. DEP believes (and the U.S. Environmental Protection Agency has agreed) that the changes described above will enable the Program to meet its goal for nitrogen oxide, while continuing to meet goals for the other two pollutants.

13. Connecticut has recently alleged that some inspection stations passed vehicles that should have failed their emissions test by administering an easier (and improper) test. Can this happen in Massachusetts?

Since 1999, the decision about what test to use for Massachusetts vehicles and the parameters to be tested has been almost entirely automated. For inspectors to override the computer selection for a vehicle, they must physically disconnect from the computer network, override the test selected, and enter false data. These steps set several computer flags that are monitored by the RMV. RMV inspectors visit stations with suspicious activities, and take enforcement actions when a station is found to be testing improperly. By the end of November, 2003, RMV had issued 2,743 violations to inspectors and stations, and had suspended 664 stations and 416 individual inspectors for improper testing.

14. Who do I call if I have questions about these Program changes?

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